

similarly amended to correct the clerical errors in the chemical names. No new matter has been added.

Thus, in response to the rejection of claim 30 under 35 USC 112, second paragraph, claim 30 has been amended as shown above. The applicants submit that all presently considered claims are fully allowable under Section 112, second paragraph. Withdrawal of this rejection is requested.

The applicants respectfully traverse the rejection of claims 1-200 under 35 USC 103(a) in view of Huber US 4,657,582 (Huber '582), Huber US 4,923,506 (Huber '506), Wilson US 4,889,747, Lloyds et al. US 5,739,081 and Turnblad et al. US 5,876,739. None of the cited references make the presently claimed invention to be obvious.

Huber '582 teaches polyhydroxy polymer/borate/salt, insoluble matrix having entrapped therein uniformly dispersed, discontinuous, domains of a biologically active agent, such as pesticides (see column 1, lines 43-68 of reference). Huber '582 teaches polyhydroxy polymer as a starting material prior to treatment with an inorganic salt and then reacting the resulting intermediate with boric acid/salt. The polyhydroxy polymer includes starches, such as corn starch, potato starch and other modified starches. A filler may optionally be added to the starting polyhydroxy polymer emulsion/dispersion. The pesticide is on the filler or salt (see column 3, lines 19-23 of reference) and the filler is blended into the initial emulsion/dispersion. There is no disclosure that the filler, including talcs, vermiculites, perlites, corn cob grits, etc. is of any advantage except to help hold the active agent during processing. The disclosed insoluble matrix composition is applied to the soil for slow release of biologically active agents, however, the reference is focused upon the slow release of pesticides.

In contrast to Huber '582, one embodiment of the presently claimed invention includes absorbent particles, such as perlite which have open, continuous capillaries and the particles are impregnated with an agriculturally beneficial material including fertilizers and/or pesticides. Absorption within the perlite holds the beneficial material for delivery, for example to the soil. In another embodiment, an interspatial blocker such as a dilute solution of starch may be mixed with the agriculturally beneficial material wherein the absorbent particles are impregnated in an amount of 40-95% of the capillaries/voids of the particles. By controlling the viscosity of the blocker and the amount of impregnation, the interspatial blocker controls the release of the beneficial material as it solublizes after application to the soil.

Huber '582 uses a filler, such as perlite, as a "filler", i.e. a material added to increase bulk. Some of the Huber fillers appear to be coincidently absorbent. When employed in the presently claimed invention, the absorbent, e.g. perlite forms the granule and is an integral part of the control release mechanism. The presently claimed invention employs an expanded perlite and in other embodiments, employs an exfoliated perlite (see page 23, line 21 to page 25, line 20 of present specification). Unlike Huber '582 the presently claimed invention does not employ an inorganic salt or boric acid/salt to make Huber's insoluble matrix. Huber's product is insoluble (see column 1, line 59) whereas the interspatial blocker of the presently claimed invention is soluble.

The presently claimed invention is fully allowable under Section 103(a) in view of the cited art.

The teachings of Huber '506 do not remedy the deficiencies of Huber '582.

Huber '506, in a manner similar to Huber '582, discloses slow release matrix carried biologically active agent whereby a starting material of polyhydroxy polymer such as starch, is mixed with an inorganic salt to form a coagulated matrix composition which holds water soluble biologically active materials (see column 1, lines 10-13, 37-47 and 52-60; and column 2, lines 22-42).

The polyhydroxy polymer includes starches, such as corn starch, potato starch and other modified starches. A filler may optionally be added to the starting polyhydroxy polymer emulsion/dispersion. The pesticide is on the filler or salt (see column 1, line 55 of reference) and the filler is blended into the initial emulsion/dispersion. There is no disclosure that the filler, including talcs, vermiculites, perlites, corn cob grits, etc. is of any advantage except to help hold the active agent during processing. The disclosed matrix composition is applied to the soil for slow release of biologically active agents, however, the reference is focused upon the slow release of pesticides.

In contrast to Huber '506, one embodiment of the presently claimed invention includes absorbent particles, such as perlite which have open, continuous capillaries and the particles are impregnated with an agriculturally beneficial material including fertilizers and/or pesticides. Absorption within the perlite holds the beneficial material for delivery, for example to the soil. In another embodiment, an interspatial blocker such as a dilute solution of starch may be mixed with the agriculturally beneficial material wherein the absorbent particles are impregnated in an amount of 40-95% of the capillaries/voids of the particles. By controlling the viscosity of the blocker and the

amount of impregnation, the interspatial blocker controls the release of the beneficial material as it solublizes after application to the soil.

Huber '506 uses a filler, such as perlite, as a "filler", i.e. a material added to increase bulk. Some of the Huber fillers appear to be coincidently absorbent. When employed in the presently claimed invention, the absorbent, e.g. perlite forms the granule and is an integral part of the control release mechanism. The presently claimed invention employs an expanded perlite and in other embodiments, employs an exfoliated perlite (see page 23, line 21 to page 25, line 20 of present specification). Unlike Huber '506 the presently claimed invention does not employ an inorganic salt to make Huber's matrix which solidifies and holds the active agent. In Huber, the agent is mixed into a thick paste and the matrix is precipitated out upon addition of the salt (see column 2, lines 32-42). The thick paste would only cling to the surface of the filler, rather than penetrate it, in contrast to the impregnation of the absorbent particle of the presently claimed invention.

The presently claimed invention is fully allowable under Section 103(a) in view of the cited references.

The cited reference of Wilson does not remedy the deficiencies of Huber '582 and Huber '506.

Wilson teaches how to make expanded perlite water repellent, i.e. hydrophobic by applying a silane emulsion (see column 2, lines 31-37). This provides a water repellent construction material such as an insulator and which may further have a biocide additive (see column 2, lines 50-57). Wilson's water repellent perlite is made by preparing an emulsion of a silicone compound, using an emulsifying agent, a buffering

solution, and water (biocide and/or other things like colorants can also be added). This emulsion is absorbed into the perlite and the resulting perlite is dried, leaving the silicone inside along with other ingredients.

The presently claimed invention includes the use of an absorbent, such as perlite, however, the Wilson approach is contrary to the present invention. The presently claimed invention should have perlite that is water attracting, i.e. hydrophilic in order to encourage penetration of the agriculturally beneficial material. Moreover, when the presently claimed invention includes an interspatial blocker, the perlite should encourage the penetration of the mixture of blocker and beneficial material. Certainly, the presently claimed invention does not suggest the application of a hydrophobic material such as silane.

The applicants submit that a person of ordinary skill in the art would not consider the teachings of Wilson when contemplating the presently claimed invention. There is no suggestion or motivation to combine the teachings of Wilson with the remaining references. The applicants assert that the combination is not tenable and should accordingly be withdrawn.

Even if the teachings of Wilson were considered in combination with the teachings of the cited art, such combination would not make the presently claimed invention to be obvious for the several reasons discussed above.

The presently claimed invention is fully allowable under Section 103(a) in view of the cited art.

The cited reference of Lloyd does not remedy the deficiencies of Huber '582, Huber '506 and Wilson.

Lloyd teaches water dispersible granules made of very small particles that are absorbent and carry biologically active substances in liquid form. The granules break up and the particles released in the water by a dispersing agent such as a surface active agent or a water-soluble polymer. The dispersed particles are sprayed through a nozzle (see column 2, line 61 -column 3, line 5).

According to Lloyd, the granules are prepared from agglomerated or extruded small particles such that they quickly disperse on application and contact with water. The particles, which may be an expanded perlite, are held together in the granule by either a specific binder or by the application of the dispersing agent itself (see column 5, lines 6-35). There is no slow or even controlled release aspect to the Wilson granule. The Wilson granule is designed to fall apart and disperse in water because of adding the dispersing agent.

In Lloyd, all of the active ingredients are applied after the granules are made which leads to poor levels of absorption of the active agent by the granules (see column 6, lines 58-63 of reference). In the present invention, the beneficial material is applied to the absorbent particles prior to granulation for better absorption.

In start contrast to Lloyd, the presently claimed invention includes granules of absorbent that are to a controlled degree, glued together by excess agriculturally beneficial material with or without the presence of excess interspatial blocker. The particles of the presently claimed invention will come apart in a controlled (generally slow) manner upon application of water (e.g. rain) and then extended release the beneficial material in a controlled manner.

The Lloyd granule falls apart and disperses almost instantly upon contact with water because of the dispersing agent.

The applicants submit that a person of ordinary skill in the art would not consider the teachings of Lloyd when contemplating the presently claimed invention. There is no suggestion or motivation to combine the teachings of Wilson with the remaining references. The applicants assert that the combination is not tenable and should accordingly be withdrawn.

Even if the teachings of Lloyd were considered in combination with the teachings of the cited art, such combination would not make the presently claimed invention to be obvious for the reasons discussed above.

The cited reference of Turnblad does not remedy the deficiencies of Huber '582, Huber '506, Wilson and Lloyd.

Turnblad teaches making a coating to apply to seeds, which contains among other possible ingredients, a binder, an insecticide, and a filler (see column 1, lines 29-39). According to Turnblad the combination of a binder in which the insecticide is dispersed, protects the seeds and seedlings from otherwise sometimes inflicted damage by the insecticide. The binder, which may be starch, serves as a matrix to hold the insecticide, as disclosed at column 2, lines 55-60 of the reference. The binder may further contain a filler, which may or may not have an absorbent character. The fillers include perlite, however, there is no suggestion of using expanded perlite and certainly not the exfoliated perlite of the presently claimed invention.

Additionally, the binder of Turnblad is taught to bind the insecticide and may superficially hold the filler in the coating on the seed. In contrast to the presently

claimed invention there is no suggestion of impregnating an absorbent with an agriculturally beneficial material with or without an interspatial blocker.

In Turnblad, the binder is mixed with the insecticide and filler such that when sprayed on the seed, the insecticide becomes slow release and the seed is protected.

The applicants submit that the art of Turnblad is not related to that of the presently claimed invention. A coating of a seed would not be contemplated by a person of ordinary skill in the art when considering the presently claimed absorbent.

The applicants submit that a person of ordinary skill in the art would not consider the teachings of Turnblad when contemplating the presently claimed invention. There is no suggestion or motivation to combine the teachings of Turnblad with the remaining references. The applicants assert that the combination is not tenable and should accordingly be withdrawn.

Even if the teachings of Turnblad were considered in combination with the teachings of the cited art, such combination would not make the presently claimed invention to be obvious for the reasons discussed above.

The presently claimed invention is fully allowable under Section 103(a) in view of the prior art.

With respect to the Information Disclosure Statement filed June 12, 2002, the applicants have fulfilled the requirements of 37 CFR 1.97, 37 CFR 1.98 and MPEP 609. The Examiner has not alleged any non-compliance by the applicants of 37 CFR 1.97, 37 CFR 1.98 or MPEP Section 609.

The Examiner, however, has not complied with MPEP Section 609.

MPEP states in the fifth paragraph of the Section that

“Once the minimum requirements of 37 CFR 1.97 and 37 CFR 1.98 are met, the examiner has an obligation to consider the information. Consideration by the examiner of the information submitted in an IDS means nothing more than considering the documents in the same manner as other documents in Office search files are considered by the examiner while conducting a search of the prior art in a proper field of search. The initials of the examiner placed adjacent to the citations on the PTO-1449 or PTO/SB/08A and 089B or its equivalent mean that the information has been considered by the examiner to the extent noted above.”

MPEP Section 609 directs examiners even more specifically in Section 609IIIC(2), stating that:

“Examiners must consider all citations submitted in conformance with the rules and this section, and their initials when placed adjacent to the considered citations on the list or in the boxes provided on a form PTO-1449 or PTO/SA/08A and 08B provides a clear record of which citations have been considered by the Office. The examiner must also fill in his or her name and the date the information was considered in blocks at the bottom of the PTO-1449 or PTO/SB/08/A and 08B form.”

The applicants appreciate that many documents were filed with the IDS dated June 12, 2002, and the Examiner may find it burdensome to consider the documents. However, all of the documents submitted with the IDS comply with 37 CFR 1.56. There is no requirement in the Rules regarding the number of documents submitted. The applicants have not buried the most pertinent prior art references in the submitted documents. Contrary to the Office Action, the applicants have no duty to point out which of the submitted documents they consider to be the closest art. The Examiner's position implies that if the closest art were pointed out then the remainder of the submitted documents would not be considered, thus, in contradiction to the Rules. The Rules contain no provision for the Examiner making his proper compliance with the

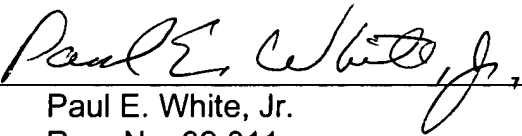
Rules contingent upon the applicants pointing out which of the documents they consider to be the closest art.

The applicants respectfully ask the Examiner to fully consider the IDS filed June 12, 2002. Moreover, the applicants submit that in view of the failure of the Examiner to previously consider the June 12, 2002 IDS, the next Office Action should not be made final.

Favorable consideration of this application is requested in view of the above.

Respectfully submitted,

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